

## WHAT IS CLAIMED:

1. A solid golf ball comprising:

a dual core including an inner, high density, spherical center core layer and an outer core layer disposed about said spherical center core layer, wherein said spherical center core layer has a specific gravity from about 1.2 to about 12.0, a diameter of less than 0.590 inches, and a Shore C hardness of 70 or less and comprises a blend including a powdered metal and a first matrix material comprising an elastomeric base material, and wherein said outer core layer has a specific gravity of less than 2.0, a diameter of up to 1.60 inches and comprises a second matrix material selected from the group consisting of thermosets, thermoplastics, and combinations thereof;

an inner cover layer formed about said dual core having a thickness of about 0.010 inches to about 0.010 inches; and

an outer cover layer disposed on said inner cover layer having a thickness of about 0.010 to about 0.010 inches, wherein said outer cover layer has a Shore D hardness less than the Shore D hardness of the inner cover layer.

2. A golf ball according to claim 1, wherein said elastomeric base material comprises polybutadiene, polyisoprene, or blends thereof.

3. A golf ball according to claim 1, wherein said outer cover layer has a Shore D hardness of 57 or less.

4. A golf ball according to claim 1, wherein said outer cover layer or said inner cover layer has a thickness of about 0.03 to about 0.06 inches.

5. A golf ball according to claim 1, wherein said second matrix material of said outer core layer comprises polybutadiene or blends thereof.

6. A golf ball according to claim 1, wherein said high density spherical center core layer has a diameter of about 0.200 to about 0.590 inches.

7. A golf ball according to claim 1, wherein said powdered metal has a specific gravity of 2.7 or more.

8. A golf ball according to claim 1, wherein said golf ball further comprises one or more additional core or cover layers.

9. A golf ball according to claim 8, wherein said golf ball exhibits a coefficient of restitution of at least 0.790.

10. A golf ball according to claim 1, wherein said golf ball exhibits a NesFactor of .880 or more.

11. A golf ball according to claim 1, wherein said golf ball exhibits a moment of inertia of less than 0.44 oz.in<sup>2</sup>.

12. A golf ball according to claim 1, wherein said powdered metal constitutes at least 50% by weight of said spherical center.

13. A golf ball according to claim 1, wherein said powdered metal comprises a mixture of 100-0% tungsten powder and 0-100% iron powder.

14. A golf ball according to claim 1, wherein said spherical center core layer has a specific gravity of less than 9.

15. A solid golf ball comprising:

a dual core including an inner, high density, spherical center core layer and an outer core layer disposed about said spherical center core layer, wherein said spherical center core layer has a specific gravity of 2.0 or more, and a Shore C hardness of 50 to 95, and comprises a blend including a powdered metal and a first matrix material comprising an elastomeric base material and wherein said outer core layer comprises a second matrix material selected from the group consisting of

thermosets, thermoplastics, and combinations thereof, wherein said outer core layer has a specific gravity of less than 1.2 and a diameter of up to 1.60 inches;

10        an inner cover layer formed about said dual core having a thickness of about 0.010 inches to about 0.050 inches and a Shore D hardness of 58 or more, and wherein said inner cover layer is formed from at least one ionomer resin; and

15        an outer cover layer disposed on said inner cover layer having a thickness of about 0.010 to about 0.055 inches and a Shore D hardness of 57 or less; and wherein said outer cover layer is formed of at least one ionomer resin or polyurethane material.

16.    A golf ball according to claim 15, wherein said elastomeric base material comprises polybutadiene, polyisoprene, or blends thereof.

17.    A golf ball according to claim 15, wherein said first matrix material of said spherical center core layer comprises about 50 weight percent polybutadiene and about 50 weight percent polyisoprene.

18.    A golf ball according to claim 15, wherein said powdered metal comprises tungsten powder.

19.    A golf ball according to claim 15, wherein said second matrix material of said outer core layer comprises polybutadiene, polyisoprene, or blends thereof.

20.    A golf ball according to claim 15, wherein said spherical center has a diameter of from about 0.200 inches to about 0.830 inches.

21.    A golf ball according to claim 15, wherein said spherical center exhibits a specific gravity of 5 to 12.

22.    A golf ball according to claim 15, wherein the difference between the specific gravity of said spherical center and said outer core layer is greater than 2.0.

23. A golf ball according to claim 15, wherein said golf ball exhibits a moment of inertia of less than 0.44 oz.in<sup>2</sup>.

24. A golf ball according to claim 15, wherein said outer cover layer has a Shore D hardness of from about 40 to about 55.